

from the matched filter 95 is delayed so as to obtain the time interval of the inverse number of the chip rate by a delay line 961. Thereafter, the pulse string is inputted to corresponding taps 962. Then, tap coefficients a0 to an are weighted onto these taps 962 to be added to each other by an adder 963, and outputted as demodulation data.

In this type of the RAKE receiving section, tap coefficients a0 to an may be set to the taps 962 in accordance with RAKE data notified from the base station, in order to synthesize the plurality of peaks outputted from the matched filter 95.

By setting the tap coefficients as mentioned above, original transmission data transmitted from the base station and delay transmission data of two schemes, which are respectively delayed by 12 chips of the PN code and 20 chips of PN code from original transmission data, are efficiently synthesized, so that demodulation data having a high S/N can be reproduced.

The above second embodiment explained that the notification of RAKE data and the phase setting of the PN code based on RAKE data were performed prior to the start of the receiving and transmitting of speech data. However, in a case where RAKE data is changed after the receiving and transmitting of speech data is started, the notification of RAKE data and the phase setting of the PN code based on RAKE data may be performed at this time.

Furthermore, the above embodiments explained the case in which delayed transmission data of two schemes are generated to be transmitted. However, delayed transmission data of three or more schemes may be generated to be transmitted. Moreover, the second embodiment explained the case that delayed transmission data of two schemes and original transmission data of one scheme are transmitted. However, there may be formed the structure in which no original transmission data is transmitted and delayed transmission data of two or more schemes.

In addition, regarding the amount of delay to be provided each delay transmission data, other specific structure of the base station, and that of the RAKE receiver, various modifications can be worked within the range without deviating from the features of the present invention.

Additional advantages and modifications will readily occur to those skilled in the art. Therefore, the invention in its broader aspects is not limited to the specific details, and representative devices shown and described herein. Accordingly, various modifications may be made without departing from the spirit or scope of the general inventive concept as defined by the appended claims and their equivalents.

What is claimed is:

1. A spread spectrum radio communication system including a function of transmitting an original transmission signal between a base station and a mobile station, and a function of synthesizing a plurality of the same transmission signals received to have a time difference by a signal receiving/reproducing circuit including delay means and synthesizing means so as to reproduce said original transmission signal to said mobile station,

said base station comprising:

weighting data generating means for generating weighting data to be provided to said synthesizing means of said signal receiving/reproducing circuit in accordance with a characteristic of a radio transmission path between said base station and said mobile station; and

weighting data transmitting means for transmitting weighting data obtained by said weighting data generating means, and

said mobile station comprising:

weighting data receiving means for receiving weighting data notified from said base station; and weighting data setting means for setting weighting data received by said weighting data receiving means in said synthesizing means, whereby said synthesizing means synthesizes the received same transmission signals in accordance with said weighting data.

2. The system according to claim 1, wherein said weighting data generating means estimates the transmission characteristic of the radio transmission path directing from said base station to said mobile station based on a receiving state of a radio signal transmitted to said base station from said mobile station.

3. The system according to claim 2, wherein when a common radio frequency is allocated to a forward link directing to said mobile station from said base station and a reverse link directing to said base station from said mobile station, and a transmission format of a radio communication signal transmitted by the common radio frequency is formed to time-divisionally duplex a plurality of slots for the forward link and a plurality of slots for the reverse link, said weighting data generating means detects a receiving state of the radio signal transmitted through said reverse link, and calculates weighting data based on the result of the detection.

4. The system according to claim 2, wherein when a different radio frequency is allocated to a forward link directing to said mobile station from said base station and a reverse link directing to said base station from said mobile station, said weighting data generating means detects a receiving state of the radio signal transmitted through said reverse link, estimates a transmission quality of the radio transmission path of said forward link based on the result of the detection, and calculates weighting data based on the result of the estimation.

5. In a radio communication system for executing a radio communication between a first radio station and a second radio station having a RAKE receiver for synthesizing a plurality of the same transmission signals received to have a time difference, through a radio transmission path, said first radio station comprising:

weighting data generating means for generating weighting data to be provided to said RAKE receiver in accordance with a characteristic of the radio transmission path; and

weighting data notifying means for notifying the weighting data obtained by said weighting data generating means to said second radio station to be set in said RAKE receiver.

6. In a radio communication system for executing a radio communication between a first radio station and a second radio station having means for generating weighting data in accordance with a characteristic of a radio transmission path and means for notifying said generated weighting data to said first radio station, through said radio transmission path, said first radio station comprising:

signal reproducing means for synthesizing a plurality of the same transmission signals received to have a time difference after being delayed by delaying means so as to reproduce an original transmission signal;

weighting data receiving means for receiving weighting data notified from said second radio station; and

weighting data setting means for setting said weighting data received by said weighting data receiving means in